STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, TN 37243
(615) 532-0554 Voice or (615) 532-0614 FAX

Certified Article Number
9414 7266 9904 2154 5167 39
SENDER'S RECORD

March 9, 2021

Honorable Mayor Justin Hanson
City of Covington
200 West Washington Avenue
Covington, TN 38019

Re: Operating Permit Amendment
Covington Waste Water Treatment Plant
298 Witherington Drive, Covington, TN
Emission Source Reference No.84-0124-01/Permit No. 072620

Dear Mayor Hanson:

On January 13, 2020, Volunteer Environmental Services (VES) applied for a construction permit to utilize medical waste as feed stock to the existing gasification/thermal oxidizer unit that currently operates under state air permit #072620. In letters dated January 29, 2020 and March 24, 2020, the Division declared that the construction permit application for the modification to the existing feed stock for the Covington Waste Water Treatment Plant Gasification/Thermal Oxidizer unit was incomplete. One of the issues presented in the Division letters was the potential applicability of 40 CFR 60, Subpart Ec (Hospital/Medical/Infectious Waste Incinerators) to the Covington facility. This issue was discussed with USEPA Region 4. In a response dated July 13, 2020, the USEPA stated that in order to make an applicability determination, additional information was needed about the process design and system operating data to determine if the unit is operating as a gasifier, pyrolysis unit, or incinerator. The USEPA response went on to quote VES's statement that some of the information requested was not available unless a trial burn of medical waste was conducted. The USEPA response further stated that any allowance for a trial burn or pilot testing would lie with the regulatory authority of this Division. A copy of the July 13, 2020 USEPA response letter is attached to this letter for your reference.

In a letter dated August 3, 2020, the Division listed two possible approaches for the City of Covington to obtain legal permission to conduct such a trial burn. A requisite to obtain permission to conduct such a trial burn was to prepare and submit an acceptable plan detailing how the source would be operated during the trial burn and a testing protocol detailing how performance testing would be conducted during the trial burn. Specific requirements and expectations pertaining to the test plan were also contained in the Division letter dated August 3, 2020 (letter attached).

The Division received an undated operational and performance test plan prepared by Mr. Mark O. Lofton, P.C. on behalf of VES on October 26, 2020 via email. Shortly thereafter, the Division received a formal request from the City of Covington on November 9, 2020 via email for an amendment to permit #072620 that would allow for the trial burn.

In a letter dated November 17, 2020 from the Division to VES, the Division provided a comprehensive response to the operational and performance test plan it received on October 26, 2020. Specific details of the operational and performance test plan requiring clarification, revision, and/or inclusion were identified and listed in the Division letter dated November 17, 2020 (letter attached).

On February 12, 2021, the Division received a revised operational and performance test plan dated February 11, 2021 via email from the City of Covington. The Division considers the revised plan to operate the gasification/thermal oxidizer unit during the trial burn as still needing additional information to be acceptable. Details from the Division letter dated November 17, 2020 are discussed below with respect to the revised plan dated February 12, 2021 as being acceptable or not.

The numbered and italicized text below is taken (sometimes paraphrased for brevity) from the Division letter dated November 17, 2020. The text following each numbered item is a discussion of the Division's review of the City of Covington's February 12, 2021, document including the additional information that is still required to address the Division's November 17, 2020, letter.

1. *(paraphrased for brevity) The Division noted the relatively low amount of medical waste proposed to be used for the trial burn with respect to the amount of medical waste proposed for use in the pending construction permit application, that it was critical to understand the ratio of medical waste to wood waste utilized as feed stock during the trial burn will be used as limiting requirements for the amount of medical waste that will be permitted to be used as a feed stock.*

On page 4, items 5, 6 and 7, of the revised February 11, 2021 plan, the medical waste rate would be 6.5% of the total feed weight rate and would be increased to some apparently unknown maximum rate based on 'reactor stability'. Medical waste bags will be delivered by hand into every other woodchip feed tube during each batch feed cycle. Items 5 and 6 explain this operation. Feed rate will be confirmed prior to the beginning of testing as stated on pages 3 and 4 of the test plan. From the estimated maximum material usages on the same page 4 (Estimated Total Woodchip consumption: ~ 6 tons; Estimated Total Medical Waste consumption: ~12-14 tons), the average for the event would be at most 70% medical waste to 30% wood, but on page 8 of the revised plan, an 80/20 blend of wood to medical waste is proposed based on the SC-200 auger and the size of woodchip to sealed plastic bag of medical waste weighing 3-5 pounds each. **Please clarify this discrepancy regarding input rates of wood and medical waste.**

The Division will also reiterate here that VES will be expected to update its pending construction permit application to reflect the maximum input rate of materials fed to the unit during the trial burn on a revised APC 102 application form.

2. *Provisions must be made to accurately weigh the amounts of both medical waste and wood waste utilized as feed stock during the trial burn so that both maximum medical waste feed input values and the maximum ratio of medical waste to wood waste can be established. Please revise the plan to clearly state exactly how the medical waste will be weighed and the weights recorded for both the proposed trial burn and on an on-going basis for any future operations.*

On page 8 of the revised February 11, 2021 plan, it is stated that a calibrated scale will be placed at the inlet to the feed hopper and an operator will log weight and times of each medical waste bag added to the unit. Woodchip will be based on auger feed output, essentially measuring a time weighted average into a container. Three to four samples will be averaged for a consistent weight. These weights will be matched with weight tickets for chip delivery trucks. The conveyor run-time to charge will be 40-50 pounds of woodchip per fill cycle. A total of 8 tons per day of woodchip will be considered a stable throughput rate. This approach appears adequate; however, the woodchip feed calibration explanation that it "…involves catching a feed cycle (auger "on" time" into a container…". **Please define what is meant by 'feed cycle (auger "on" time)'.**

3. *The proposed procedure for determining the amount of wood waste being used as feed stock is acceptable to the Division, but the proposal needs to be expanded to address how the procedure will be conducted on an on-going basis for any future operations.*

It is not clear if this was addressed. **If the procedure to determine how the wood waste feed rate will be conducted on an on-going basis is proposed to be as described on page 3, item 2 of the test plan, then the plan should clearly specify that.**

4. *(paraphrased for brevity) The medical waste processed during the trial burn must represent a "worse case condition" (e.g., result in the highest potential emissions of pollutants being tested for) and documentation attesting to this fact must be included as a part of the report of the trial burn.*

A "worst case condition" is not specifically identified in the revised February 11, 2021 plan. The plastic content of the medical waste to be treated is not identified. There is discussion regarding non-chlorinated plastics having essentially no effect on emission profile, and emissions are expected to be the same as it would if wood was the only feedstock. There is no identification or discussion about what the medical waste would be comprised of, other than statements regarding carbon and oxygen ratios. See item 6 below for further discussion of the need for further information.

5. *(paraphrased for brevity) The Division's August 3, 2020 letter stated that the operational plan must include a maximum overall time frame for conducting the trial burn. The letter stated that the length of the trial burn from the introduction of medical waste to cessation of performance testing.*

On pages 4 and 5 of the revised February 11, 2021 plan, the VES proposed test plan is listed as 12 separate steps. The first step that includes the introduction of medical waste is step 5 (Begin adding on individually sealed Medical Waste bag by hand…". The last step that includes medical waste

is step 11 ("...cease adding Medical Waste bags to the feed tube...". Based on the step times specified for steps 5 through 11, the minimum overall time frame for conducting the trial burn, from the introduction of medical waste to the cessation of medical waste is 18 hours and the maximum is 26 hours. **Based on this information, it is the Division's intent to limit the total time of the trial burn from introduction of medical waste to cessation of medical waste (not cessation of performance testing) to 26 hours. Please confirm that 26 hours is sufficient for the trial burn. The Division encourages you to include a safety margin that accounts for unforeseen circumstances not included in the proposed test plan, such as issues with operation of the gasification unit or test equipment.**

6. *(introductory text paraphrased for brevity) The issues identified in the July 13, 2020 USEPA inconclusive applicability determination letter to VES, concerning applicability of 40 CFR 60, Subpart Ec to the gasification/ thermal oxidizer unit, were not addressed. The issues must be addressed to allow the USEPA to make a determination regarding the applicability of 40 CFR 60, Subpart Ec to the unit.*

The operational and performance test plan to conduct the trial burn does not address the collection of data related to resolution of many of the issues raised by USEPA in their July 13, 2020 letter. It is critical to recognize that the primary purpose of the trial burn is to collect data necessary to provide EPA with the information necessary to render a determination of applicability of 40 CFR 60, Subpart Ec (Hospital/Medical/Infectious Waste Incinerators) to the unit at the Covington facility.

The following items were listed in the July 13, 2020 USEPA letter:

- *Identification of any unit/process modifications necessary to the unit to affect the process change from a biomass/sewage sludge to a "regulated medical waste" process.*

It is noted in the revised February 11, 2021 plan that modifications to the feed system will likely require some engineering review and redesign to accommodate the as received bags of medical wastes. Considering this statement contained in the revised plan, **please address how the circumstance in which the existing feed/auger system becomes jammed or stopped up during the test would be handled.**

- *Updated mechanical drawings of the unit.*

The February 11, 2021 plan states "See attached set of P&ID's". However, no P&ID's (piping and instrumentation diagrams) were attached. Following a call between yourself and me, ten separate P&ID drawings were submitted to the Division via email on February 26, 2021. The drawings were forwarded by the Division to USEPA Region 4 on March 4, 2021 via email.

- *Material and energy balances and net endo/exothermicity for the process to reveal the operating/process conditions of the unit (temperatures, oxygen,) and resultant syngas (CO, H_2, CH_4 and section 129 pollutant concentrations).*

The February 11, 2021 plan states "Material and Energy Balances - see attached summary table." However, during a call with yourself me during the week of February 22nd, I indicated that no summary table was attached. The material and energy balances were not included with the February 26, 2021 email The operational and performance test plan to conduct the trial burn does not address the collection of data related to resolution of this issue raised by USEPA in their July 13, 2020 letter. It is critical to recognize that the primary purpose of the trial burn is to collect data necessary to provide EPA with the information necessary to render a determination of applicability of 40 CFR 60, Subpart Ec (Hospital/Medical/Infectious Waste Incinerators) to the unit at the Covington facility.

Please revise the operational and performance test plan with details as to what operating parameters will be monitored, how those parameters will be measured, and specify the data reduction that will be undertaken in order to provide EPA the desired material and energy balance and net endo/exothermicity information for the process as identified by EPA in their July 13, 2020 letter.

- *Explanation of the monitoring for measurement/control of temperature and oxygen levels in the unit and resultant syngas (if monitored).*

Please revise the operational and performance test plan with details as to what operating parameters will be monitored, how those parameters will be measured, and specify the data reduction that will be undertaken in order to provide EPA the desired process information (temperature and oxygen levels in the unit and resultant syngas) as identified in their July 13, 2020 letter.

- *Within the sections of the unit as it relates to processing of the "regulated medical waste", the steam injection rate, char production, fuel oil or pyrolytic oil production rate and yield %, oil higher heating value (HHV), pressure, and diversion rate; as well as the disposition of the char, pyrolytic-oil and syngas.*

Please revise the operational and performance test plan with details as to what operating parameters will be monitored, how those parameters will be measured, and specify the data reduction that will be undertaken in order to provide EPA the desired process information (steam injection rate, char production, fuel oil or pyrolytic oil production rate and yield %, oil higher heating value (HHV), pressure, and division rate) as identified in their July 13, 2020 letter. Also, please discuss the disposition of the char, pyrolytic oil and syngas.

- *Expected composition of "regulated medical waste" to be received and processed and percentages of each.*

Please revise the operational and performance test plan to address this issue raised by USEPA in their July 13, 2020 letter. Furthermore, this information should also be used to resolve the issue regarding testing under a "worst case condition" identified in item 4 of the Division's November 17, 2020 letter. Anticipated chlorinated and non-chlorinated plastic content of the medical waste should be specified and identified where appropriate as the "worst case condition" for testing purposes.

- *Statement of declaration regarding the disposition of the unit regarding the necessity for RCRA permitting.*

Please revise the operational and performance test plan to address this issue raised by USEPA in their July 13, 2020 letter.

7. *The requirement for the submittal of a performance test protocol has not been fulfilled. (paraphrased for brevity)*

The supplemental information attached with your letter details the emissions testing proposed for the gasifier. That attachment lists ten points under the heading "Emissions Testing Parameters". The Division has the following comments pertaining to several of these points.

The Division agrees to the testing methodologies listed under point No. 2 Test Procedures as each procedure is defined with the exception to Method 5 where VES states "no significant departures from these procedures". Any departure from the test method must be approved by the Division in advance of the test.

In point No. 5, Proposed 80/20 Woodchip/Medical Blend, VES describes the input of the blend material to the gasifier as 80 % woodchips and 20% medical waste. However, VES states that the input material ratios may change as dictated by the moisture of the blend material and the limitation to the feed auger. The Division will consider the ratio established during the test as an operational limit.

In point No. 6, Medical Waste Weighing Provisions, and point No. 7, Woodchip Feed Calibrations, the procedures presented are acceptable to the Division and must be accurately performed as they are critical in evaluating the results of the trial burn.

In point No. 8, Plastic Content and Emissions Profile Changes (Worse-Case Issue), the Division notes the VES statement that non-chlorinated plastics will not be considered as a worse-case operating condition. Based on VES information, a worse-case condition must be defined prior to testing. Also, if non-chlorinated plastics are not addressed in the trial burn, they will not be allowed during any future operations.

In point No. 9, Trial Runs and Unit Downtime, VES has described the length of time as 5-hours for each test. This conflicts with the information on page 4 of the document that states that they will be 1-hour test runs. **Please revise the proposed test plan that starts on page 3 and the Emission Testing Parameters that starts on page 6 to specify the length of each test run and the total amount of time necessary for the emission testing.**

In point No. 10, Thermal Oxidizer (TO) Operation, the Division notes that the temperature of the TO operation will be monitored during the trial burn. The excess oxygen was stated in another section (item 4 on page 3 of the letter) as 5% excess oxygen will be set but here VES is stating excess oxygen will be set to 6-8%. **Please modify the test plan and Emission Testing Parameters to clarify this parameter.**

An exact date for this testing was not submitted with this test plan, however, it has been mentioned that an April time frame is possible. The Division accepts this plan as meeting the 30-day requirement prior to the engineering testing. **A minimum two-week notice of the actual date of the test will be necessary to provide the Division the opportunity to observe the trial burn and test.**

Until an acceptable operational and performance test plan is submitted, the Division is unable to fulfill the City of Covington's November 9, 2020 request to amend permit #072620 that would allow for the trial burn to be conducted. It is critical to recognize that the primary purpose of the trial burn is to collect data necessary to provide EPA the information needed for it to render a determination of applicability of 40 CFR 60, Subpart Ec (Hospital/Medical/Infectious Waste Incinerators) to the unit at the Covington facility.

Please provide a revised operational plan and test protocol that includes requested revisions and all outstanding information. The revised plan and protocol must be submitted by the current permittee, City of Covington, and should be submitted to the Division either via email to air.pollution.control@tn.gov or mailed hard copy to: Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 15th Floor, 312 Rosa L. Parks Avenue, Nashville, TN 37243. Authorization for the trial burn of medical waste cannot be granted until a complete and acceptable operational plan and test protocol have been received and approved.

If you have any questions, issues, or need further information concerning the contents of the operational test plan, or if you find that a meeting would be beneficial to discuss any aspect(s) of the necessary requirements and expectations to be fulfilled in order to conduct a proposed trial burn; please contact Mr. John Fuss at (615) 532-0535 or via e-mail at John.Fuss@tn.gov. If you have any questions, issues, or need further information concerning the contents of the trial burn performance test plan, please contact Mr. Bryan Parker at (615) 687-7037 or via e-mail at Bryan.Parker@tn.gov.

Sincerely,

James P. Johnston, P.E.
Deputy Director
Permitting & Regulatory Development

Attachments - November 17, 2020, letter from the Division
August 3, 2020, letter from the Division
July 13, 2020, USEPA letter

c: Mark O. Lofton, P.C. [electronic]
Lloyd Lipman-Volunteer Environmental Services [electronic]
David Gray-City of Covington [electronic]
Blair Beaty-State of Tennessee [electronic]
Mark Bloeth-US Environmental Protection Agency [electronic]

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, TN 37243
(615) 532-0554 Voice or (615) 532-0614 FAX

November 17, 2020

Certified Article Number
9414 7266 9904 2154 5119 63
SENDER'S RECORD

Mr. Stephen Scott, President
Volunteer Environmental Services
549 East Pass Road, STE F
Gulfport, MS 39507

Re: Construction Permit Application
Covington Waste Water Treatment Plant
298 Witherington Drive, Covington, TN
Emission Source Reference No.84-0124-01 /Permit No. 977924

Dear Mr. Scott:

On January 13, 2020, Volunteer Environmental Services applied for a construction permit to utilize medical waste as feed stock to the existing gasification/thermal oxidizer unit that currently operates under state air permit #072620. In letters dated January 29, 2020 and March 24, 2020, the Division declared that your construction permit application for the modification to the existing feed stock for the Covington Waste Water Treatment Plant Gasification/Thermal Oxidizer unit was incomplete. One of the issues presented in the Division letters was the potential applicability of 40 CFR part 60, subpart Ec – Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators (HMIWI) to the Covington facility. This issue was discussed with USEPA Region 4. In a response dated July 13, 2020, the USEPA stated that in order to make an applicability determination, additional information was needed about the process design and system operating data to determine if the unit is operating as a gasifier, pyrolysis unit, or incinerator. The USEPA response went on to quote Volunteer Environmental Services statement that some of the information requested was not available unless a trial burn of medical waste was conducted. The USEPA response further stated that any allowance for a trial burn or pilot testing would lie with the regulatory authority of this Division. A copy of the July 13, 2020 USEPA response letter is attached to this letter for your reference.

In a letter dated August 3, 2020, the Division summarized the entire situation regarding the proposal to utilize medical waste as a feed stock for the existing Covington gasification/thermal oxidizer unit. A copy of the August 3, 2020 letter, including attachments, is attached for your reference. The August 3, 2020 letter listed two possible approaches for the City of Covington and Volunteer Environmental Services to obtain legal permission to conduct such a trial burn. A prerequisite for either methodology for obtaining legal permission to conduct such a trial burn was the submittal of an acceptable plan detailing how the source was to be operated during the

trial burn and a testing protocol detailing how performance testing was to be conducted during the trial burn. Specifics for both of these plans are contained in the Division letter dated August 3, 2020. Please pay close attention to the attachments to that letter that specifically list the items that must be present in an acceptable test protocol and list the pollutants for which performance testing must be conducted and the testing methods to be employed.

The Division acknowledges receipt of an undated operational and performance test plan submitted by Mr. Mark O. Loftin on behalf of Volunteer Environmental Services. This plan was submitted to the State of Tennessee on October 26, 2020. The plan has undergone review by Division staff. From that review Division staff provides the following comments regarding the submitted plan:

The Division considers the detailed description of how the City of Covington and Volunteer Environmental Services proposes to operate the gasification/thermal oxidizer unit during the trial burn to not meet the requirements laid out in the the August 3, 2020 letter and its attachments. In working on revisions to the proposed plan, please pay close attention to the following:

1. The submitted plan indicates there will be a utilization of a mixture of wood waste and medical waste as feed stock during the proposed trial burn with medical waste constituting a maximum of 20 per cent of the total unit feed. This contradicts Vounteeer Environmental Serives' February 24, 2020, revised permit application wherein it was proposed to utilize 100 percent medical waste as feed stock. Furthermore, in the submitted plan the proposed material input weight for the trial burn as a fraction of the input weight set forth in the February 24, 2020 revised permit application. It is very important to understand that the maximum amount of medical waste utilized as feed stock during the trial burn and the maximum ratio of medical waste to wood waste utilized as feed stock during the trial burn will appear in any future permit the Division may issues as limiting requirements on the amount of medical waste that will be permitted to be used as a feed stock. Please consider this choice carefully and revise either the plan or the application to be consistent.

2. Provisions must be made to accurately weigh the amounts of both medical waste and wood waste utilized as feed stock during the trial burn so that both maximum medical waste feed input values and the maximum ratio of medical waste to wood waste can be established. Please revise the plan to clearly state exactly how the medical waste will be weighed and the weights recorded for both the proposed trial burn and on an on-going basis for any future operations.

3. The proposed procedure for determining the amount of wood waste being used as feed stock is acceptable to the Division, but the proposal needs to be expanded to address how the procedure will be conducted on an on-going basis for any future operations.

4. The medical waste processed during the trial burn must represent a "worse case condition" (e.g., result in the highest potential emissions of pollutants being tested for)

and documentation attesting to this fact must be included as a part of the report of the trial burn. For example, if the medical waste utilized during the trial burn is low in plastic content, then the percent plastic value will be included as a limiting factor in any future permit the Division may issue allowing for the continued use of medical waste as a feed stock. Because this source operates with no add-on air pollution control equipment, a variation in feed stock can have a significant effect on emissions. This issue must be addressed as a part of any acceptable operational plan. Any exceedance of the weight, ratio, or material type established during the trial burn, and later established as a limitation in any permit the Division may issue, will require additional performance testing to assure compliance at the higher input levels or ratios. Also, any future permit allowing for the continued use of medical waste as a feed stock will require continual monitoring of the weights of all materials utilized as feed stock to the unit. Please revise the plan to specifically address how the trial burn will represent the "worst case condition" expected if the Division issues a permit to allow the continued use of medical waste as a feedstock. Also, please revise the plan to included procedures that will be used on an ongoing basis to verify that the medical waste being processed would not result in potential emissions greater than during the trial burn (e.g., would not have a higher plastic content.)

5. The Division's August 3, 2020 letter stated that the operational plan must include a maximum overall time frame for conducting the trial burn. The submitted test plan listed an estimated maximum unit run time for completion of the trial burn of 22 hours (starting with the step 5, in which medical waste bags are added to the woodchip feet tube and ending with step 10, in which the gasifier runs on just woodchips to ensure that all medical waste has been consumed.) The Division has concerns that this time frame may be insufficient for the actual conducting of the trial burn as it does not account for down time between various steps of the trial burn, it only accounts for two performance tests instead of the minimum required three performance tests as set forth below, and it does not provide for any margin of error. Please revise the proposed plan to specify the maximum length of the trial burn from the first introduction of medical waste to cessation of the performance test. If no revisions to the time frame are made, the Division plans to establish a maximum time limitation for the trial burn of 24 consecutive hours based on the submitted proposed plan.

6. The July 13, 2020 USEPA response to an inquiry by Volunteer Environmental Services, concerning the potential applicability of 40 CFR 60, Subpart Ec to the gasification/thermal oxidizer unit, requested further information/clarifications regarding a number of issues relating to the proposed operation of the unit. These were not addressed in the proposed operational plan and must be addressed in order to allow the USEPA to make a determination regarding the applicability of 40 CFR 60, Subpart Ec to the unit. Region 4 requested operating temperatures and oxygen levels of the unit. Volunteer Envirionmental Services stated the unit will operate at a temperature greater than 1500° F, up to approximately 1800° F, but did not provide any oxygen data or demonstrate that the unit is endothermic.

Please revise the proposed plan to include measurement of the operating temperatures and oxygen levels of the unit and responses to as much of the information as possible requested by USEPA in its July 13, 2020 letter. For your reference, USEPA Region 4 has identified that the following information is necessary to conduct an applicability determination with respect to HMIWI:

- Identification of any unit/process modifications necessary to the unit to affect the process change from a biomass/sewage sludge to a "regulated medical waste" process.
- Updated mechanical drawings of the unit.
- Material and energy balances and net endo/exothermicity for the process to reveal the operating/process conditions of the unit (temperatures, oxygen,) and resultant syngas (CO, H2, CH4 and section 129 pollutant concentrations).
- Explanation of the monitoring for measurement/control of temperature and oxygen levels in the unit and resultant syngas (if monitored).
- Within the sections of the unit as it relates to processing of the "regulated medical waste", the steam injection rate, char production, fuel oil or pyrolytic oil production rate and yield %, oil higher heating value (HHV), pressure, and diversion rate; as well as the disposition of the char, pyrolytic-oil and syngas.
- Expected composition of "regulated medical waste" to be received and processed and percentages of each.
- Statement of declaration regarding the disposition of the unit regarding the necessity for RCRA permitting.

7. The requirement for the submittal of a performance test protocol has not been fulfilled. Most significantly, the submitted plan specifically states that only two test runs will be conducted. Performance testing generally requires that a least three test runs be conducted (40 CFR 60.56c(1)). Most of the requirements listed in the "Protocol and Test Report Requirements" document that was attached to and referenced in the August 3, 2020 letter were not included in the submitted plan. Most significantly, there was no discussion of the pollutants for which testing would be conducted nor was there a discussion of the testing methodologies to be employed. This requirement was clearly stated in the August 3, 2020 letter and a table (Table 1B) describing both required pollutants and required methodologies was attached to that letter. The Division also notes that other test protocol requirements such as proposed test location, proposed calculation methods, and test equipment calibrations were not addressed. Please revise the proposed plan to include three test runs as specified in Table 1B that was attached to and referenced in the Division's August 3, 2020, letter. Also, please include all information listed in the "Protocol and Test Report Requirements" document that was attached to and references in the Divison's August 3, 2020 letter.

The Divison's August 3, 2020 letter stated that the "submittal of a performance test protocol must be a part of any permit amendment application or Variance request to conduct a trial burn." With the failure to fulfill the submittal requirements set forth in the Division letter of August 3,

2020, the Division is unable to move forward with the request by the City of Covington and Volunteer Environmental Services to obtain legal permission to conduct such a trial burn until the proposed plan is revised to meet the requirements addressed in the Divison's August 3, 2020 letter, USEPA's July 13, 2020 letter and repeated in this letter. **Please provide a revised operational plan and test protocol that includes requested revisions and all outstanding information. The revised plan and protocol must be submitted by the current permittee, City of Covington, and should be submitted to the Division either via email to air.pollution.control@tn.gov or mailed hard copy to: Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 15th Floor, 312 Rosa L. Parks Avenue, Nashville, TN 37243. Authorization for the trial burn of medical waste cannot be granted until a complete and acceptable operational plan and test protocol have been received and approved.**

The Division has received a request from the current permitee, City of Covington, to amend the permit to allow for the trial burn. The Division will begin processessing that request, but the amended permit will require the submission of a complete and approveable operation plan and test protocol prior to any trial burn being conducted if the Division does not receive one prior to issuing the permit amendment.

If you have any questions, issues, or need further information concerning the contents of the operational test plan, or if you find that a meeting would be beneficial to discuss any aspect(s) of the necessary requirements and expectations to be fulfilled in order to conduct a proposed trial burn; please contact Mr. John Fuss at (615) 532-0535 or via e-mail at John.Fuss@tn.gov. If you have any questions, issues, or need further information concerning the contents of the trial burn performance test plan, please contact Mr. Bryan Parker at (615) 687-7037 or via e-mail at Bryan.Parker@tn.gov.

Sincerely,

James P. Johnston, P.E.
Deputy Director
Permitting & Regulatory Development

Attachments-August 3, 2020 letter including attachments
July 13, 2020 USEPA letter

c: Mr. Mark O. Loftin, P.C. [electronic]
Mayor Hanson-City of Covington [electronic]
David Gray-City of Covington [electronic]
Blair Beaty-State of Tennessee [electronic]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 13, 2020

Mr. Stephen Scott, President
Volunteer Environmental Services
549 East Pass Road, Suite B
Gulfport, Mississippi 39507

Dear Mr. Scott:

This is in response to your letter dated January 16, 2020, to the U.S. Environmental Protection Agency, Region 4 regarding a "gasification" unit (GS-200) located at the City of Covington Wastewater Treatment Plant (WWTP), 298 Witherington Drive, Covington, Tennessee 38019. In the letter you requested an applicability determination regarding the "gasification" plant in Covington, Tennessee as it pertains to 40 CFR part 60, subpart Ec – Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators (HMIWI). Unfortunately, at this time, Region 4 is unable to make a determination of applicability with the information we have. Please see the remainder of this letter for details.

Background

The City of Covington WWTP was previously permitted by the Tennessee Department of Environment and Conservation (TDEC) to process woody biomass and sewage sludge in the unit (GS-200) to produce synthesis gas (syngas). The syngas was combusted in a thermal oxidizer and heat from the hot flue gas was extracted and used to drive an electric generator.

Volunteer Environmental Services (VES) has entered into a contract with the City of Covington to assume operational and financial control of the Covington facility. In order to complete the project, VES is proposing to change the waste stream from woody biomass and sewage sludge to "regulated medical waste" as you understand that term from the following U.S. Environmental Protection Agency website: https://www.epa.gov/rcra/medical-waste. This referenced term is not a statutory or regulatory definition. Region 4 will be evaluating your proposed medical waste stream only with respect to the relevant hospital, medical and infectious waste definitions in the HMIWI rule. As a result of the proposed processing change, additional permitting is required by TDEC.

Review

Region 4 has been in communication with VES and TDEC to gain a better understanding of the unit (GS-200), including its original function and design capabilities, operating parameters, and previous permitting allowances. Region 4 understands that the historical feedstock was comprised of wood chips and sewage sludge. Region 4 has also reviewed additional information provided to VES via a February 11, 2020, letter from FC&E Engineering, LLC. This information provided emission factors from Entech Renewable Energy Technologies for a medical waste unit in Kuznica, Poland (2004), which processed 3.5 tons per day (tpd) of medical waste. FC&E also provided to TDEC their regulatory analysis

regarding HMIWI subpart Ec, concluding that the unit in question is exempt since it meets the definition of a 'pyrolysis unit' as defined in 40 CFR 60.51(c), which states "[p]yrolysis means the endothermic gasification of hospital waste and/or medical waste using external energy."

Regarding capacity, VES proposes to process significantly more regulated medical waste in GS-200 than the facility in Poland. This is reflected in your permit application (signed 2/24/20), which includes an input rate for regulated medical waste of 64 tpd (~ 5,333 pounds/hour). It is unclear if the much smaller unit at the facility in Poland is similar to the unit at the Covington facility. Region 4's preliminary research indicates that the unit installed at the City of Covington WWTP appears to be a model PHG-12, manufactured by PHG Energy, Inc. (now Aries Energy). However, VES has not provided documentation to Region 4 that specifies the exact model and capacity of GS-200. Without model and capacity information, Region 4 is unable to determine if the emission factors from the facility in Poland are representative of the emissions expected from the Covington facility.

Additionally, Region 4 believes that the PHG unit installed at the Covington facility was never intended to process regulated medical waste. There is nothing in the original PHG information which accompanied the permit application to TDEC (signed on 01/13/2020) to indicate otherwise. VES did revise the permit application information from "Organic biomass, or feedstock, such as urban wood waste, wood chips, and municipal solid waste is converted to a commodity called producer gas." to a revised version reading, "Feedstock, such as medical waste is converted to a commodity called producer gas." The use of the term "such as" is not sufficient to understand the type of waste that will be processed. Furthermore, to the extent medical waste will comprise 100% of the feed stream, Region 4 has not seen any documentation that the PHG unit is capable of processing a medical waste feedstock stream.

Finally, with respect to the definition of 'pyrolysis unit', Region 4 requested operating temperatures and oxygen levels of the unit. VES stated the unit will operate at a temperature greater than 1500 °F, up to approximately 1800 °F, but did not provide any oxygen data or demonstrate that the unit is endothermic. VES has indicated that this information is not available unless a trial burn of medical waste is conducted to obtain oxygen data (as well as other exacting data) needed for determining applicability. Region 4 believes that any allowance for a trial burn or pilot testing will be up to TDEC as the permitting authority, but notes that startup of the unit will start the "clock" for deadlines for conducting performance testing under 40 CFR part 60.8 and compliance with the emissions limits of section 60.52c, should it be determined that HMIWI applies to the unit.

Conclusion

After communication with both VES and TDEC, the EPA has concluded that there is still not enough information submitted regarding VES's proposal for the processing of medical waste at the City of Covington WWTP and its applicability to the HIMWI incineration rule at 40 CFR Part 60, subpart Ec. For the EPA to make an applicability determination we need additional information about the process design and system operating data to determine if the unit is operating as a gasifier, pyrolysis unit or incinerator. Additionally, the EPA makes applicability determinations based upon source-specific operating parameters and not on a conceptual basis or hypothetical scenario.

Region 4 has identified that the following information is necessary to conduct an applicability determination with respect to HMIWI:

- Identification of any unit/process modifications necessary to the unit to affect the process change from a biomass/sewage sludge to a "regulated medical waste" process.
- Updated mechanical drawings of the unit.
- Material and energy balances and net endo/exothermicity for the process to reveal the operating/process conditions of the unit (temperatures, oxygen,) and resultant syngas (CO, H_2, CH_4 and section 129 pollutant concentrations).
    - Explanation of the monitoring for measurement/control of temperature and oxygen levels in the unit and resultant syngas (if monitored).
- Within the sections of the unit as it relates to processing of the "regulated medical waste", the steam injection rate, char production, fuel oil or pyrolytic oil production rate and yield %, oil higher heating value (HHV), pressure, and diversion rate; as well as the disposition of the char, pyrolytic-oil and syngas.
- Expected composition of "regulated medical waste" to be received and processed and percentages of each.
- Statement of declaration regarding the disposition of the unit regarding the necessity for RCRA permitting.

This response was coordinated with the EPA Office of Air Quality Planning and Standards and the EPA Office of Compliance. If you would like to discuss or have additional information to provide, please contact Mark Bloeth at (404) 562-9013 or by email at bloeth.mark@epa.gov.

Sincerely,

KATHLEEN LUSKY Digitally signed by KATHLEEN LUSKY Date: 2020.07.13 09:25:38 -04'00'

Kathleen Lusky
Acting Chief
Air Analysis and Support Branch

cc: Mr. John Fuss, TDEC

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, TN 37243
(615) 532-0554 Voice or (615) 532-0614 FAX

Augutst 3, 2020

Certified Article Number
9414 7266 9904 2154 5146 67
SENDER'S RECORD

Mr. Stephen Scott, President
Volunteer Environmental Services
549 East Pass Road, STE F
Gulfport, MS 39507

Re: Construction Permit Application
Covington Waste Water Treatment Plant
298 Witherington Drive, Covington, TN
Emission Source Reference No.84-0124-01/Permit No. 977924

Dear Mr. Scott:

On January 13, 2020, Volunteer Environmental Services applied for a construction permit to utilize medical waste and (at the time) pharmaceuticals as feed stock to the existing gasification/thermal oxidizer unit that currently operates under state air permit #072620. Pharmaceuticals were removed as a potential feedstock to the unit in a subsequent application revision dated February 24, 2020. In letters dated January 29, 2020 and March 24, 2020, the Division declared that your construction permit application for the modification to the existing feed stock for the Covington Waste Water Treatment Plant Gasification/Thermal Oxidizer unit was incomplete. Item 4. of the March 24, 2020 letter reads as follows:

> The brief regulatory analysis provided in the additional information received February 24, 2020, does not substantively demonstrate that the existing unit at-Covington would be exempt from 40 CFR 63, Subpart Ec (Hospital/Medical/Infectious Waste Incinerators) under the proposed conditions. Determinations regarding the applicability of the exemption at 40 CFR 60.50c(f) for "any pyrolysis unit" have been made on a case-by-case basis by the Environmental Protection Agency (EPA). The information contained in your application suggests that the modification to the method of operation of the unit as proposed would be subject to 40 CFR 60, Subpart Ec. As such, the application should be updated to address compliance with 40 CFR 60, Subpart Ec, or provide a determination in writing from EPA that the exemption at 40 CFR 60.50c(f) is valid for the unit under the conditions for which you propose the unit to be operated.

In response to Division concerns relating to the above listed potential federal regulatory applicability issue, Volunteer Environmental Services requested a determination from USEPA Region 4 concerning the applicability of Subpart Ec to the Covington facility. The Division is in receipt of the USEPA Region 4 response dated July 13, 2020. In that response the USEPA stated that in order to make an applicability determination, additional information was needed about the process design and system operating data to determine if the unit is operating as a gasifier, pyrolysis unit, or incinerator. The USEPA response went on

to quote Volunteer Environmental Services statement that some of the information requested was not available unless a trial burn of medical waste was conducted. The USEPA response further stated that any allowance for a trial burn or pilot testing would lie with the regulatory authority of this Division.

In regard to conducting such a trial burn, the Division must first state that neither the Tennessee Air Pollution Control Regulations nor the Tennessee Air Quality Act provides any specific language addressing such a proposed trial burn. Condition 7 of the current facility permit #072620 states that only chipped wood biomass and municipal sludge shall be used as fuel for this source with natural gas listed as alternate fuel only. Since your January 13, 2020 construction permit application is considered incomplete at this time, authorization for a trial burn cannot be accomplished through the pending construction permitting action.

However, there are two options open to Volunteer Environmental Services to obtain legal permission to conduct such a trial burn. The first would be for the City of Covington to request an amendment to the existing permit to allow for a short-term trial burn utilizing medical waste as feed stock. The second option to obtain legal permission to conduct such a trial burn would be for the City of Covington to petition the Tennessee Air Pollution Control Board for a Variance pursuant to the provisions of the Tennessee Code: Title 68: Chapter 201 (Air Quality Act), specifically at 68-201-118.

Conditions of either a permit amendment or a Variance will contain specifics concerning performance testing to be conducted during such a trial burn and a time limitation for the trial burn. Federal regulations under 40 CFR 63, Subpart EEE allow for facility operation of up to 720 hours under an approved test plan for preparations and for conducting performance testing. Although the City of Covington unit is not subject to this regulation, the Division will use this time frame as the maximum limit for a requested short-term trial burn. As a part of the request for either a permit amendment or a Variance, a detailed description of how the unit will be operated during the trial burn must be submitted. This should include, at a minimum, how the unit will be brought back into operation, how medical waste will be fed to the unit, the rates at which each feed stock, including medical waste, will be fed to the unit during each phase or aspect of the trial burn, how long it will take for the unit to reach operating conditions that would be considered normal operation of the unit while processing medical waste, and the total amount of time, in hours or days, that will be necessary from the start of the trial burn until completion of performance testing. This information will be used to determine the permissible length and operations of the unit during the trial burn. Be advised that upon completion of the performance testing to be conducted as a part of the trial burn, use of medical waste as a feed stock shall cease until the Division approves the performance testing and a permit modification is issued to accommodate medical waste as a feed stock.

Given the potential applicability of 40 CFR 60, Subpart Ec to the facility, the Division will require that performance testing be conducted for the pollutants listed and using the test methods specified in Table 1B to Subpart Ec of Part 60 with the exception of testing for dioxin/furan compounds during the trial burn. A copy of this table is included as an attachment to this letter. The submittal of a performance test protocol must be a part of any permit amendment application or Variance request to conduct a trial burn. In addition to addressing the performance testing required in Table 1B to Subpart Ec of Part 60, the test protocol must also address the issues presented by USEPA Region 4 in its July 13, 2020 letter. A copy of standardized Division requirements for the content of a test protocol is also enclosed for your reference. Be advised that, based on the results of the April 15, 2014 performance test at the facility, compliance with the particulate limitation set forth in Subpart Ec was not demonstrated while the source was utilizing wood biomass and municipal sludge as feed stock.

If you have any questions, issues, or need further information concerning the permitting related issues addressed above including those relating to the proposed trial burn, please contact either Mr. John Fuss at

(615) 532-0535 or via e-mail at John.Fuss@tn.gov, or Ms. Julie Verissimo at (615) 532-0582 or via e-mail at Julie.Verissimo@tn.gov. If you have any questions, issues, or need further information concerning the contents of the trial burn test protocol, please contact Mr. Bryan Parker at (615) 687-7037 or via e-mail at Bryan.Parker@tn.gov. If you find that a meeting would be beneficial to discuss any aspect(s) of the necessary requirements and expectations to be fulfilled in order to conduct a proposed trial burn, please contact Mr. John Fuss at (615) 532-0535 or via e-mail at John.Fuss@tn.gov to coordinate a time and place.

Finally, the proposed utilization of medical waste as feed stock to the existing gasification/thermal oxidizer unit may make the unit subject to Tenn. Comp. R. & Regs. 1200-03-25 (Standards for Infectious Waste Incinerators). This State regulation is completely independent of and has different applicability criteria from 40 CFR 60, Subpart Ec. The Division will evaluate the additional information to be provided in response to the January 29, 2020 and March 24, 2020 incomplete application letters and the July 13, 2020 USEPA letter to determine the potential applicability of this State regulation to the Covington Waste Water Treatment Plant Gasification/Thermal Oxidizer unit.

If you have any questions, issues, or need further information concerning the potential applicability of Tenn. Comp. R. & Regs. 1200-03-25 to the facility, please contact Ms. Lacey Hardin at (615) 532-0545 or via e-mail at Lacey.Hardin@tn.gov.

Sincerely,

James P. Johnston, P.E.
Deputy Director
Permitting & Regulatory Development

Attachments – 2

c: USEPA Region 4

TENNESSEE DIVISION OF AIR POLLUTION CONTROL
COMPLIANCE VALIDATION

Protocol and Test Report Requirements

1. Introduction: Include information on the type of facility being tested, the purpose of the test (permit condition, board order, new construction, etc.), and the standards which apply. Also list the personnel involved it the test.

2. Process Description with simple flow diagram.

3. Process Operation: The process operation shall be in accordance with the pretest agreement signed by both the company and the TAPCD Compliance Validation Program or otherwise be acceptable to the TAPCD Engineering Program.

4. Test data to include:
   A. Summary of Results, to include at a minimum:
      a. Stack diameter
      b. Stack gas velocity
      c. Stack gas flowrate (ACFM & SCFM)
      d. Emissions, listed in pounds per hour and in the units of the standard cubic foot (70 °F, 1 atm., dry gas);1b/MMBTU heat input: 1b/100 ab charged; grains/dry standard cubic foot, corrected to 12% Co2; etc.
      e. Percent isokinetic of test (where applicable)

   B. Sample Calculations
   C. Description of Sampling Procedures and Laboratory Procedure
   D. Legible copy of Field Data Sheets
   E. Legible Copy of Lab Data Sheets
   F. Schematic Diagram of Sampling Site showing distances to upstream and downstream disturbances.
   G. Sample Chain of Custody Documentation
   H. Identification of regulation applicable to source (If both Federal and State regulations apply, so state)
   I. Legible Field Orsat Data sheets (where applicable)

5. Calibration Data: include the most recent data and results of calibration for all equipment used in the test. At a minimum, include the following:

   A. Pretest and post-test metering system calibration.
   B. Pitot calibration: If geometrical considerations are used in obtaining pitot coefficient (Cp), include a copy of the data sheet used in verifying the geometry.
   C. Calibrations on all the temperature measuring devices (thermometers, thermocouples, etc.) used in the test.
   D. Calibration data on nozzles used in the test (where applicable).

6. Visible Emissions Evaluation conducted during the test, if available.
7. Copy of strip chart from opacity monitor, if available, with test period denoted on chart as "start", "stop", "hold", etc.
8. Copy of observer's evaluation or copy of letter waiving requirement that an observer be present.
9. Reports shall be submitted electronically to Air.Pollution.Control@tn.gov

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES
Subpart Ec—Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators

TABLE 1B TO SUBPART Ec OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT AFFECTED FACILITIES AS DEFINED IN §60.50c(a)(3) AND (4)

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits HMIWI size			Averaging time[1]	Method for demonstrating compliance[2]
		Small	Medium	Large		
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot)	66 (0.029)	22 (0.0095)	18 (0.0080)	3-run average (1-hour minimum sample time per run)	EPA Reference Method 5 of appendix A-3 of part 60, or EPA Reference Method M 26A or 29 of appendix A-8 of part 60.
Carbon monoxide	Parts per million by volume	20	1.8	11	3-run average (1-hour minimum sample time per run)	EPA Reference Method 10 or 10B of appendix A-4 of part 60.
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet)	16 (7.0) or 0.013 (0.0057)	0.47 (0.21) or 0.014 (0.0061)	9.3 (4.1) or 0.035 (0.015)	3-run average (4-hour minimum sample time per run)	EPA Reference Method 23 of appendix A-7 of part 60.
Hydrogen chloride	Parts per million by volume	15	7.7	5.1	3-run average (1-hour minimum sample time per run)	EPA Reference Method 26 or 26A of appendix A-8 of part 60.
Sulfur dioxide	Parts per million by volume	1.4	1.4	8.1	3-run average (1-hour minimum sample time per run)	EPA Reference Method 6 or 6C of appendix A-4 of part 60.
Nitrogen oxides	Parts per million by volume	67	67	140	3-run average (1-hour minimum sample time per run)	EPA Reference Method 7 or 7E of appendix A-4 of part 60.
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.31 (0.14)	0.018 (0.0079)	0.00069 (0.00030)	3-run average (1-hour minimum sample time per run)	EPA Reference Method 29 of appendix A-8 of part 60.
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.017 (0.0074)	0.0098 (0.0043)	0.00013 (0.000057)	3-run average (1-hour minimum sample time per run)	EPA Reference Method 29 of appendix A-8 of part 60.
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.014 (0.0061)	0.0035 (0.0015)	0.0013 (0.00057)	3-run average (1-hour minimum sample time per run)	EPA Reference Method 29 of appendix A-8 of part 60.

[1]Except as allowed under §60.56c(c) for HMIWI equipped with CEMS.

[2]Does not include CEMS and approved alternative non-EPA test methods allowed under §60.56c(b).

[74 FR 51414, Oct. 6, 2009, as amended at 76 FR 18414, Apr. 4, 2011]